Remarks

Claims 1 – 9 have been rejected under 35 U.S.C. § 102(b). Claim 3 has been objected to for informality. In accordance with the Examiner's requirement, Applicant respectfully submits that the amendment to the aforementioned claim was made only to correct a spelling error. Accordingly, the Applicant has not narrowed the claims.

No new matter has been added.

Response

Claims 1 – 9 have been rejected as being anticipated by US Patent No. 6,088,769 (Luick et al.), hereinafter "Luick". Applicants respectfully disagree.

As it is understood by the Applicants, Luick discloses a two-level method for maintaining coherence between shared data stored within a plurality of memory devices, each memory device residing in a different node within a multiprocessor system. Each node of the system comprises a local coherence unit (the first level), and is connected to a global coherence unit (the second level). See Col. 2, lines 42-48. The local coherence unit in each node maintains a local coherence table, which indicates the data stored in the local memory within the node. The global coherence unit monitors communications between the nodes and detects transfers of data from one node to another. When data is transferred from one node to another node, the global unit updates a global coherence table that data is being shared between the two nodes. See Col. 2, lines 49-55.

In accordance with Luick, as it is understood by Applicants, when a node requests data, the local coherence unit of the requesting node checks the local coherence table (the first level) to determine if the data is stored in local memory. If the data is stored in local memory, the node retrieves the data from local memory. Otherwise, the local coherence unit requests the global coherence unit to retrieve the data requested. The global coherence unit then checks to determine whether the address of the requested data is mapped to another node. If so the data is transferred to the requesting node. Once data has been transferred to the requesting node, the global coherence table is updated.

Contrary to the teachings of Luick, the present invention stores information regarding the state of data in the interconnecting pathway. Each time a requesting node requests data, the interconnecting pathway checks the stored information to determine the location of the

current copy of the data, retrieves the current copy of the requested data, and directs the data to the requesting node. The above steps are done by the interconnecting pathway of the present invention for all requests by all nodes.

Also, contrary to the teaching of Luick, the present invention claims a method wherein a central device (interconnecting pathway) receives, stores, and checks all state information of the cache lines, and data location information for each node in the system. The interconnecting pathway of the present invention operates on all requests made by each node. The single level method and system of the present invention reduces latency in data flow throughout the system by storing the location and state of requested data or other location and state information in a central device (i.e., the interconnecting pathway), which examines cache lines states for each line in all nodes simultaneously.

In Luick, the local coherence unit operates on all requests made by its respective node. The Luick global unit only operates on requests by the local coherence unit to obtain data from a different node, resulting in a two-level method of maintaining coherence. Also, the global unit is updated only when data has been transferred from one node to another, contrary to the present invention which claims the simultaneous update of the global unit of the present invention for all requests on the system.

Luick does not teach the storing of the state of all data throughout the system in the central device (interconnecting pathway), nor does Luick teach that the interconnecting pathway checks the location of requested data for each request by all nodes, directing the data to the requesting node. Accordingly, Luick does not, and cannot, anticipate the system as claimed in pending claims 1 – 9, because such anticipation would require each and every step or element of the present invention to be taught by the cited reference, which Luick fails to do. Therefore, it is respectfully submitted that claims 1 – 9 are patentable over Luick.

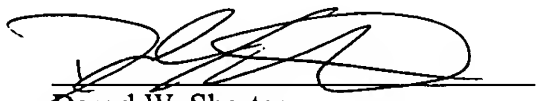
Similarly, even if combined with other prior art, including the prior art made of record and not relied upon, Luick could not provide a basis for an obviousness rejection of the present invention. The steps missing in Luick that distinguish it from the present invention cannot be added by additional art to combine to teach Applicants' system and method for maintaining cache coherence in a multiprocessor system.

It is respectfully submitted that all pending claims are in condition for allowance, and respectfully request that allowance be granted at the earliest date possible. Should the

Examiner have any questions or comments regarding Applicant's amendments or response, the Examiner is asked to contact Applicant's undersigned representative at (215) 575-7194.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0979.

Respectfully submitted,



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